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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/944,545 | 08/31/2001 | Donald R. Mullen | 1726.7221000 | 3037 |
| 25697 | 7590 | 08/05/2004 | EXAMINER | |
| ROSS D. SNYDER & ASSOCIATES, INC. 115 WILD BASIN RD. SUITE 107 AUSTIN, TX 78746 | | | | OWENS, DOUGLAS W |
| ART UNIT | | PAPER NUMBER | | |
| | | 2811 | | |

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/944,545 | MULLEN ET AL. | |
| | Examiner | Art Unit | |
| | Douglas W Owens | 2811 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 20 May 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-32 and 34-46 is/are pending in the application.
 4a) Of the above claim(s) 7-13,20,21,25,27,34 and 35 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,15-19,22-24,28,29,31,36-41 and 43-46 is/are rejected.
 7) Claim(s) 2-6,14,26,30,32,42 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 15 – 19, 22 – 24, 31, 36 – 41, 43, 45 and 46 are rejected under 35

U.S.C. 102(b) as being anticipated by US Patent No. 6,046,905 to Nelson et al.

Regarding claims 1 and 31, Nelson et al. teach an IC cover (Figs. 1 – 5),

comprising:

a plate portion (24);

an attachment portion (26) adapted to be directly coupled to a circuit board (14),

wherein the circuit board has at least one die (12) on a first surface; and

a spring portion (32) coupled to the plate portion and the attachment portion (The spring is coupled to the plate portion via the attachment portion).

Regarding claim 15, Nelson et al. teach an IC cover, wherein the spring portion is disposed at an end of the plate portion.

Regarding claim 16, Nelson et al. teach an IC cover, wherein the spring portion includes a plurality of individual spring elements, wherein a first one of the plurality of individual spring elements is disposed at a first end of the plate portion and a second one of the plurality of individual spring elements is disposed at a second end of the plate portion.

Regarding claims 17 and 19, Nelson et al. teach an IC cover, wherein the spring elements are disposed around a perimeter of the plate portion.

Regarding claim 18, Nelson et al. teach an IC cover, wherein at least one of the spring elements is maintained in a non-relaxed state (Col. 2, lines 62 – 67).

Regarding claim 22, Nelson et al. teach an IC cover, further comprising a heat sink portion (30) coupled to the plate portion.

Regarding claim 23, Nelson et al. teach an IC cover, wherein the heat sink portion includes extended surfaces.

Regarding claim 24, Nelson et al. teach an IC cover, wherein the extended surfaces include fins.

Regarding claim 36, Nelson et al. teach an IC cover comprising:
a plate portion (24) having a plurality of edges;
a plurality of attachment portions (26) adapted to be directly coupled to a circuit board (14); and

a plurality of spring portions (32) coupled to the plate portion and the plurality of attachment portions, wherein each of the spring portions is oriented along a direction of a corresponding one of the plurality of edges.

Regarding claim 37, Nelson et al. teach an IC cover, wherein each of center lines of the plurality of spring portions are oriented so as to be non-radial relative to a centroid of the plate portion.

Regarding claim 38, Nelson et al. teach an IC cover, wherein each of center lines of the plurality of spring portions are oriented approximately tangentially in relation to a corresponding one of the plurality of edges.

Regarding claim 39, Nelson et al. teach an IC cover, wherein the plurality of spring portions are oriented in a similar rotational direction with respect to a centroid of the plate portion.

Regarding claim 40, Nelson et al. teach an IC cover, wherein the plurality of spring portions are configured to cooperatively accommodate displacement of the plate portion from a relaxed position.

Regarding claim 41, Nelson et al. teach an IC cover, wherein at least one of the plurality of spring portions is maintained in a non-relaxed state when at least one of the plurality of attachment portions is coupled to the circuit board such that the plate portion overlies at least one IC.

Regarding claim 43, Nelson et al. teach an IC cover, comprising:

- a plate portion (24);
- an attachment portion (26) disposed around a portion of a periphery of the plate portion; and
- a spring portion (32) coupled between the plate portion and the attachment portion.

Regarding claim 45, Nelson et al. teach an IC assembly comprising:

- a circuit board (14);
- a die (12) disposed on a first surface of the circuit board; and

a cover including:

a plate portion (24) disposed so as to cover the die;
an attachment portion (26) disposed around a portion of a periphery of the plate portion; and
a spring portion (32) coupled between the plate portion and the attachment.

Regarding claim 46, Nelson et al. teach an IC cover, comprising:

a plate portion (24) having a plurality of edges;
a plurality of attachment portions (26) disposed around at least a portion of the edges of the plate portion; and
a plurality of spring portions (32) coupled between the plate portion and the plurality of attachment portions, wherein each of the spring portions is oriented along a direction of a corresponding one of the plurality of edges.

3. Claims 28, 29 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by admitted prior art (See Fig. 1).

Regarding claims 28 and 44, Admitted prior art teaches an integrated IC cover comprising:

an attachment portion (104) adapted to be directly coupled to a circuit board (101), wherein a die (106) is coupled to the circuit board; and
a plate portion (102) of flexible material (the material must be flexible, since it is shown to bow) disposed substantially internal to the attachment portion and coupled

thereto, wherein the plate portion is formed so as to exert pressure to the die when the attachment portion is coupled to the circuit board.

Regarding claim 29, admitted prior art teaches an IC cover, wherein the plate portion is formed so as to exert pressure to the at least one die in a direction toward the circuit board.

Allowable Subject Matter

4. Claims 2 – 6, 14, 26, 30, 32 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 15 – 19, 22 – 24, 28, 29, 31, 36 – 41, 43 – 45 and 46 have been considered but are moot in view of the new ground(s) of rejection.

6. With respect to the restriction of species, upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141.

Conclusion

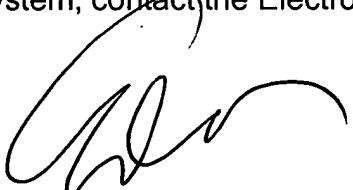
7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W Owens whose telephone number is 571-272-1662. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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